ENVIRONMENTAL

Fact Sheet



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Global Climate Change and Its Impact on New Hampshire's Fall Foliage and Maple Sugar Industry

Colors May Dull, Some Tree Species May Die

The brilliance of New Hampshire's fall foliage colors may be adversely affected, according to predictions by many climate change scientists. Warmer temperatures may eradicate some species, and pests and pathogens may strike harder. Forests potentially thinned and prey to disease may lose their variety of rich color hues and brilliance.



What is Global Climate Change?

Life on Earth is possible because the sun's energy warms the Earth and its atmosphere. As this warmth radiates back into space, a portion is absorbed by a delicate balance of heat-trapping gases in the atmosphere, creating an insulating layer. The insulating layer, functioning much as a conventional greenhouse, acts to elevate temperatures on Earth. This "greenhouse effect" is a necessary natural global mechanism. Without it, the Earth's climate would be hostile to human life. Human contributions to greenhouse gases have led to an "enhanced greenhouse effect," often referred to as climate change or global warming. Today's atmospheric concentrations of carbon dioxide (CO2), the primary greenhouse gas, are 30 percent above the pre-industrial levels of 200 years ago. At present rates, they may double as early as 2050.

Potential Impacts on Foliage

- For the past 100 years extreme events, including increases of severe droughts, winter freeze-thaw cycles, and outbreaks of tree pests and pathogens, have been associated with die-backs of several northern hardwood species.
- Several New Hampshire tree species may decline, while others, if warming is severe enough, may perish. Northern hardwoods and the beautiful fall colors they produce may migrate north 100 300 miles. Southern trees may replace northern hardwood, spruce, and fir forests.
- Potential summer drought conditions will cause trees to drop their leaves prematurely.
- Sugar maples are extremely susceptible to mid-winter thaws and summer droughts. The maple syrup industry, an annual \$3 3.5 million industry, may collapse. Consequently, sugar maples, a source of brilliant fall leaf colors, may sicken, decline and disappear, or their geographic distribution may migrate north.
- Revenue from New Hampshire foliage visitors is approximately \$292 million annually. On average, foliage visitors spend 16 percent more than non-foliage visitors. Economic loss to the tourism industry from foliage losses may occur.

For More Information

For more information on climate change, its impacts on New Hampshire's foliage and other resources, visit www.des.nh.gov or contact the DES Air Resources Division at (603) 271-1370.